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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,939	11/30/2000	Robert J. Donaghey	99-463b	8618

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EXAMINER	
MOORE JR, MICHAEL J	

ART UNIT	PAPER NUMBER
2666	6

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/725,939	DONAGHEY ET AL.	
	Examiner	Art Unit	
	Michael J. Moore, Jr.	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *30 November 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because of the following informalities. On line 1, it is believed that the word "least" is missing between the words "at" and "one". Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities: On page 16, line 5; the word "onced" should be "once". Appropriate correction is required.

Claim Objections

3. Claim **13** is objected to because of the following informalities: there is punctuation missing between the words "router" and "the" on line 6. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims **1, 3, 4, 6, 7, 9, 10, 12, 13, 15, 16, 18, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayanoglu et al. (U.S. 5,822,309) in view of Iwata (U.S. 5,933,425).

Regarding claims **1, 10 and 19**, Ayanoglu et al. discloses a system and a method of assigning virtual circuit identifiers for routing of data in an ad-hoc network in Figures 10 and 11. Figure 11 shows a routing connection of mobile station A to mobile station B through a plurality of nodes (PBS I – PBS IV) interconnected by links. These links are assigned virtual path identifiers (VPIs) and virtual circuit identifiers (VCIs) that are communicated to the mobile stations upon the completion of a Quality of Service (QoS) check shown in Figure 10, which are used for data routing. This QoS check determines whether QoS parameters (thresholds) such as peak and average bandwidth, latency, jitter, etc. are satisfied by the links of the network on a hop-by-hop basis as stated in column 11, lines 28-52. Ayanoglu et al. states in column 11, lines 39-42, that if average bandwidth is one of the QoS parameters (thresholds) specified, a node (PBS III) will check for the availability of the requested bandwidth (link state information) on its outgoing port.

Ayanoglu et al. does not explicitly disclose the link state information comprising link data rate information. However, Iwata discloses available cell rate as a QoS link parameter in Figures 4A, 6A, 8A, and 10A as well as column 3, lines 36-39. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given

these references to use the data rate of Iwata as a QoS parameter with the method of the Ayanoglu et al. reference. A motivation for doing so would be to monitor the link data rate for optimum path selection between a source and a destination as stated in column 3, lines 39-41 of Iwata.

Regarding claims **3 and 12**, Ayanoglu et al. does not explicitly disclose the link state information comprising link data rate information. However, Iwata discloses available cell rate as a QoS link parameter in Figures 4A, 6A, 8A, and 10A as well as column 3, lines 36-39. Iwata further discloses administrative weights that are assigned to the links based upon the available cell rates of each link in Figure 4A. These administrative weights are used to identify optimum (fastest links) paths from source to destination as shown in Figure 4B. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the optimum path identification method of Iwata with the virtual circuit identifier assignment method of the Ayanoglu et al. reference. A motivation for doing so would be to monitor the link data rate for optimum path selection between a source and a destination as stated in column 3, lines 39-41 of Iwata.

Regarding claims **4 and 13**, Ayanoglu et al. discloses a network device (router) comprising a network interface 34 that is connected through a link to another PBS (node) of a plurality of nodes in a network in Figure 4. As shown in Figures 10 and 11, links are assigned virtual path identifiers (VPIs) and virtual circuit identifiers (VCIs) that are communicated to the mobile stations upon the completion of a Quality of Service (QoS) check shown in Figure 10, which are used for data routing. This QoS check

determines whether QoS parameters (thresholds) such as peak and average bandwidth, latency, jitter, etc. are satisfied by the links of the network on a hop-by-hop basis (performed by the processor of each node) as stated in column 11, lines 28-52. Ayanoglu et al. states in column 11, lines 39-42, that if average bandwidth is one of the QoS parameters (thresholds) specified, a node (PBS III) will check for the availability of the requested bandwidth (link state information) on its outgoing port.

Ayanoglu et al. does not explicitly disclose the link state information comprising link data rate information. However, Iwata discloses available cell rate as a QoS link parameter in Figures 4A, 6A, 8A, and 10A as well as column 3, lines 36-39. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to use the data rate of Iwata as a QoS parameter with the method of the Ayanoglu et al. reference. A motivation for doing so would be to monitor the link data rate for optimum path selection between a source and a destination as stated in column 3, lines 39-41 of Iwata.

Regarding claim **6 and 15**, Ayanoglu et al. does not explicitly disclose the link state information comprising link data rate information. However, Iwata discloses available cell rate as a QoS link parameter in Figures 4A, 6A, 8A, and 10A as well as column 3, lines 36-39. Iwata further discloses administrative weights that are assigned to the links based upon the available cell rates of each link in Figure 4A. These administrative weights are used to identify optimum (fastest links) paths from source to destination as shown in Figure 4B. These administrative weights are stored in a link state database and are regulated by a QoS-based routing controller (processor). At the

time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the optimum path identification method of Iwata with the virtual circuit identifier assignment method of the Ayanoglu et al. reference. A motivation for doing so would be to monitor the link data rate for optimum path selection between a source and a destination as stated in column 3, lines 39-41 of Iwata.

Regarding claims **7 and 16**, Ayanoglu et al. discloses a computer-readable medium for controlling a processor to perform virtual circuit identifier assignment in an ad-hoc network in Figure 9. Figure 9 shows routing tables M_1 and M_2 stored within a node used by the node for routing data in a network with a plurality of nodes interconnected by links. As shown in Figures 10 and 11, links are assigned virtual path identifiers (VPIs) and virtual circuit identifiers (VCIs) that are communicated to the mobile stations upon the completion of a Quality of Service (QoS) check shown in Figure 10, which are used for data routing. This QoS check determines whether QoS parameters (thresholds) such as peak and average bandwidth, latency, jitter, etc. are satisfied by the links of the network on a hop-by-hop basis (performed by the processor of each node) as stated in column 11, lines 28-52. Ayanoglu et al. states in column 11, lines 39-42, that if average bandwidth is one of the QoS parameters (thresholds) specified, a node (PBS III) will check for the availability of the requested bandwidth (link state information) on its outgoing port.

Ayanoglu et al. does not explicitly disclose a node obtaining link data rate information. However, Iwata discloses available cell rate as a QoS link parameter in Figures 4A, 6A, 8A, and 10A as well as column 3, lines 36-39. At the time of the

invention, it would have been obvious to someone of ordinary skill in the art given these references to use the data rate of Iwata as a QoS parameter with the method of the Ayanoglu et al. reference. A motivation for doing so would be to monitor the link data rate for optimum path selection between a source and a destination as stated in column 3, lines 39-41 of Iwata.

Regarding claims **9 and 18**, Ayanoglu et al. does not explicitly disclose a node obtaining link data rate information. However, Iwata discloses available cell rate as a QoS link parameter in Figures 4A, 6A, 8A, and 10A as well as column 3, lines 36-39. Iwata further discloses administrative weights that are assigned to the links based upon the available cell rates of each link in Figure 4A. These administrative weights are used to identify optimum (fastest links) paths from source to destination as shown in Figure 4B. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the optimum path identification method of Iwata with the virtual circuit identifier assignment method of the Ayanoglu et al. reference. A motivation for doing so would be to monitor the link data rate for optimum path selection between a source and a destination as stated in column 3, lines 39-41 of Iwata.

7. Claims **2, 5, 8, 11, 14, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayanoglu et al. (U.S. 5,822,309) in view of Iwata (U.S. 5,933,425) and in further view of Narvaez-Guarnieri et al. (U.S. 6,347,078).

Regarding claims **2, 5, 8, 11, 14, and 17,** Ayanoglu et al. in view of Iwata does not disclose that the link state information (data rate information) received at a node is

received in packets flooded from at least one node of the plurality of nodes in the network. However, Narvaez-Guarnieri et al. discloses a widely used link-state routing protocol called Open Shortest Path First (OSPF) in column 1, lines 24 and 25 that uses flooding techniques. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to make use of the flooding techniques of Narvaez-Guarnieri et al. with the link state information teachings of Ayanoglu et al. in view of Iwata. A motivation for doing so would be to use flooding techniques to ensure that the link state information packets reach their intended destination.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Morgenstern et al. (U.S. 6,587,467), Shue et al. (U.S. 6,222,845), Haas (U.S. 6,304,556), Brody et al. (U.S. 5,822,304), Wool et al. (U.S. 6,563,833), Fawaz et al. (US 2003/0133406), Chng (U.S. 6,122,282), and Johnson et al. (U.S. 6,301,257) are all references that contain material pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (703) 305-8703. The examiner can normally be reached on Monday-Friday (8:30am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.
Examiner
Art Unit 2666

mjm MM

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